

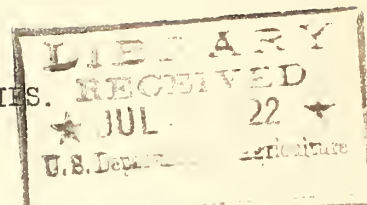
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THE STABLE-MANURE BUSINESS OF BIG CITIES.

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From New York City alone more than half a million tons of stable manure are shipped to truckers and farmers each year. If for the tonnage of New York City the values of 0.5 per cent nitrogen, 0.25 per cent phosphoric acid, and 0.5 per cent potash be given, there will be available from the stables of this one city 2,500 tons of nitrogen, 1,250 tons of phosphoric acid, and 2,500 tons of potash. Translating this into other terms, the nitrogen is equal to approximately 16,000 tons of nitrate of soda, the phosphoric acid to 8,000 tons of acid phosphate, and the potash to 5,000 tons of sulphate of potash. In all the big cities of the East the collecting and shipping of stable manure is now an established business, conducted by well-organized companies, with agents in smaller places who retail to the consumer. The aggregate tonnage reaches a very large figure. Much of this business represents a clear saving, because at times quantities of manure have been thrown away, not being considered of sufficient value to justify the payment of freight charges. Now, however, stable manure is a recognized article of commerce and brings prices ranging from \$1 a ton or less to as much as \$3, with freight charges added. To the trucker especially the business is a benefit, as it enables him to obtain at a reasonable price a fertilizer which is of great value in the production of his crops.

SHIPMENT

Although a great part of the manure from cities and towns is used on the truck farms in their immediate vicinity, yet from New York City some of it is shipped by rail to points in Connecticut, New Jersey, and Pennsylvania and by boat to the Norfolk trucking region. Occasional shipments have been sent even to Maine and Florida.

In many instances the zones of shipment overlap. Thus New York manure is used in the Philadelphia suburbs, and there is a region between New York and Boston where manure is used from both cities. In the trucking region between Baltimore and Washington manure is shipped from both cities, although Baltimore has more of the trade. In Norfolk dealers collect manure on their own account, act as agents for New York concerns, and, in addition, buy manure from stockyards, especially the Richmond stockyards.

As proper disposal of the manure produced in city stables is a sanitary necessity, it must be collected regularly and frequently--practically every day. Many towns, also, particularly in New England, where at times carloads of manure have been left standing on sidings in the main streets, have adopted regulations to govern the handling of such material.



In all cities some of the manure is taken directly from the stable to the farm, under private arrangements, in vehicles of all sorts, from one-horse carts to 5-ton trucks, two-horse wagons predominating. For hauls of more than 20 miles, where the roads are good, trucks are of especial service. Many interurban electric roads now are shipping manure. The manure companies, however, usually ship either by railroad or by boat. The railroad cars used hold from 20 to 50 tons each, averaging about 30 tons. On inland waterways and in protected waters, such as Long Island Sound, open barges are satisfactory, but in open water, as in the haul from New York to Norfolk, the manure is stored beneath the deck. Open barges usually carry from 200 to 500 tons and closed barges as much as 1,200 tons.

GRADING.

Manure companies sometimes divide the fresh manure into two grades, depending on the amount of bedding material included. The standard bedding is straw, but shavings, sawdust, peat moss, and peanut hulls are used sometimes. Straw is better fertilizer material than the other kinds of bedding, except perhaps peat moss, and manure containing straw brings higher prices than where other materials are used. The poorer stables often furnish the best manure, because of greater economy in the use of bedding, and because of the drying and reuse of the straw, which increases the amount of urine absorbed by it. In some of the best private stables so much straw is used that the manure is valued chiefly as mulching material.

STORING AND TREATING.

In the summer when farmers are too busy to haul manure and the prices are low, many manure companies store their supply at points convenient to shipping facilities, but away from centers of population, and sell it later as rotted manure. One large New York company has a storage plant and private railroad yard near Monmouth Junction, N. J., where immense stacks of manure are accumulated in the slack season. More than 60,000 tons are reported on hand at one time. It is handled by steam cranes. Rotting of the stored manure is facilitated by pumping the leachings back upon the piles by means of a steam pump. Part of the manure is dried, ground, and bagged in an up-to-date manufacturing plant and is sold as pulverized stock manure, competing on the market with ordinary mixed commercial fertilizer. This is a more concentrated product than the bulky fresh manure and may be used economically by farmers at greater distances.

QUALITY

Manure will deteriorate if not properly handled unless preservatives are added, but its low value does not warrant much expenditure for preservation. The addition of acid phosphate, for example, increases the fertilizing value of the manure and lessens the loss of nitrogen, but buyers usually are not willing to pay for the increased value. Adding water in proper quantities also will prevent loss through fermentation, but this may lead to abuses, as the product is sold by weight.

Few products have a value low enough for profitable use in adulterating manure, and although the writer has seen tannery waste, street sweepings, and sawdust used for the purpose, the practice is probably not common. New York City manure has an especially good reputation in this respect, as the street sweepings are collected separately and disposed of by the city. Where possible, however, it is advisable for the farmer himself to see his cars or barges loaded.

Street sweepings, though considered an adulterant when sold with manure, often can be obtained cheaply enough to justify their purchase. They are valuable principally for the manure they contain, but are extremely variable. When taken from highways over which there is much automobile traffic they may contain sufficient mineral oil to render their agricultural use dangerous.

SUPPLY.

The supply of manure is dependent upon the number of horses in use in cities. In some cases the number is decreasing, though the decrease appears to be slow, and in some cities horses have increased. Opinions differ greatly as to the permanence of the city manure supply, but for some time at least it probably will be an important source of fertility for the trucking districts. As it is safe to count 5 tons of manure per horse per year, the possible quantity of manure from a city may be calculated roughly if the number of horses is known.

BENEFITS.

Ordinarily it is not advisable for the general farmer to buy manure from the city if he can produce it on his farm, as his crops, owing to their lower acreage value, will not stand as high an outlay for fertilizers as will the truck crops. The railroads usually make so low a rate on manure that there is probably little direct profit in handling it. The increase in crops following its use, however, makes more tonnage of crops to be moved and also a more prosperous agricultural community with more buying power. As to truckers, there seems to be little doubt that those who are using large amounts of manure are the ones who are usually successful. While manure can be bought ordinarily for much less than \$5 a ton, even at that price its use has been known to give large profits.

The question is often asked as to whether it is advisable to use stable manure or commercial fertilizer. In most cases it is better to use both, but in case of doubt stable manure should be used, as it adds to the soil not only potash, nitrogen, and phosphoric acid, but also beneficial bacteria and humus. In cases where manure can be obtained at a reasonable price, it should find a use on a great number of farms. In estimating its agricultural value a number of factors must be considered. The fertilizer constituents in it may be worth only from \$2.50 to \$5 per ton, but its effects in improving the texture of the soil often may amount to a great deal

more than this. Also, it must be remembered that the results are more lasting than is the case with most of the other soil amendments. At the present time the cost of manure in general is below its agricultural value. In fact, one of the reasons for the increased cost of stable manure is a greater general appreciation of this fact.

Land near a big city sometimes may be bought cheaply and built up by the generous use of stable manure. If good farming is practiced, there is a fair chance of success by this method. The author has seen land appreciate in value more than 300 per cent in 5 years by the use of city stable manure, while at the same time giving a consistent profit in crops grown. And if these profits are made by the use of manure costing up to \$5 per ton on the farm, how much greater profits are to be made by the use of similar material in many places where it may be obtained for the expense of hauling.

Where sufficient manure is not obtainable, it is possible to mix the manure secured with several times its volume of peat or muck and thus secure a compost which has a value almost equal to that of manure itself. This is increased in value by the addition of acid phosphate.

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